

NOTES ON A NEW ROTIFER. *MELICERTA*
COLONIENSIS.

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(With plate XI).

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The present note is a description of what seems to be an entirely new species of colonial rotifer of the family Melicertadae, order Rhizota. They occur as circular masses of tough yellow gelatinous matter, a quarter of an inch or more in diameter. Occasionally they encrust the stems of water plants but oftener are found on submerged pieces of loose bark. In the latter case the form is hemispherical. Two hundred individuals were counted in one colony, not quite a quarter of an inch in diameter. Like most colonial rotifers, the feet of each individual are placed at the centre, and the bodies radiate on all sides. The head, or trochal disc, is very large and shaped like a four-leaved shamrock. During narcotization, at first, muscular control relaxes, and the organ becomes circular like the flower of the pansy. This phase passes, and the ordinary melicertan outline appears.

Occasionally, an additional contraction is seen, and a fifth smaller petal forms, frequently at the top, but occasionally on the lower edge of the disc. In fixing the animal for preservation, the outline becomes much squarer than it is in a natural state. A line of strong cilia borders the disc forming the principal wreath. Lying within this is the secondary wreath, formed of much shorter and finer

cilia. Between these is sunk a deep gutter extending all round the disc. The action of the cilia drives a strong current of water through this channel. Protozoa and floating vegetable spores are thus carried on to the buccal funnel. This, densely lined with cilia, hurries the food down to the mouth, or chamber where the mastax or jaws are situated. On either side there appears to be a channel for carrying off the surplus water. The neck is bent, so that the trochal disc lies parallel to the long axis of the body, but can easily be placed in any direction. The creature is very sensitive, and quickly shrinks within the gelatinous cover when alarmed: when this occurs the trochal disc, though three times the diameter of the body, is folded together and disappears, part of the neck is also invaginated, a series of parallel curves pointing to the place of disappearance.

A remarkable feature, which distinguishes it from *M. ringens*, is the possession of a pair of brilliant red eyes. These are connected together by a broad band of red pigment. A living colony seen under the microscope, the trochal discs extending like a bouquet of flowers around the periphery, and each adorned with a pair of brilliant ruby eyes, forms a most interesting sight.

The antennae, so conspicuous in *M. ringens*, are absent: a small pimple near the ovary may represent them, but no tactile hairs are traceable on it.

Immediately below the jaws is a large oval mass, bearing two small lobes on its upper surface. The oesophageal tube is narrow, lined with cilia, and runs obliquely for some distance before reaching the stomach. On either side of this organ are two pear-shaped gastric glands. The stomach is long, opening into a broad intestine and the anus distinctly projects from the body. The faecal pellets are oval and projected with some force from the body, so as to be thrown beyond the attraction of the currents caused by the cilia on the trochal disc. The space behind the alimentary canal is occupied by the yolk gland, which largely fills the tube.

From this part the body gradually tapers to form a long slender tubular foot. It varies in length in different

individuals, being adapted to the thickness of the matrix of the colony. The extreme section of the tube is of stiffer material, inflexible and adheres to the gelatinous matrix with some degree of firmness ; but the rest of the foot and body slides loosely within its own special cavity in the colony. In contraction the lower portion especially shrinks into a close series of concentric folds. The principal body muscles arise a short distance from the extreme end of the tube to which they are affixed. They are six in number, and proceed as separate strands upwards to near the anus, where they divide into twelve branches, some of which are inserted into the alimentary and reproductive glands, while others pass on to the corona and are the means by which it is invaginated. A number of glands are scattered along the interior of the foot similar to the mucous glands found in other rotifers of the same family. The mastax is a large elongated organ, built on the melicertan type, but differing from *M. ringens* and others in the details of its structure.

It lies across the centre of the face of the trochal disc and is twice as long as it is high. It is hinged in the centre, each side falling and rising about fifty times in a minute. The central portion or incus of each jaw is broadly triangular, and is destitute of the fine parallel teeth usually shown in the jaws of *Melicerta* and *Lacinularia*. At each corner of the base of the triangle is a blunt tooth, the sides are united by a bifurcating rod. Three thin, wide arches form the exterior frame of each jaw. A rod from each arch passes onward, and below the incus is broadened into a spatulate form, and lie with their flat sides parallel to each other, thus forming three large broad teeth at right angles to the side of the incus.

From the inner edge of the base of the incus, a rod extends to form the fulcrum, this instead of terminating in a point as in *M. ringens*, broadens out into a wide base for muscular attachment. The manubrium consists of the three circular arches just mentioned. These are strengthened by two rods and a transverse bar. They afford a wide attachment for the muscles, and furnish a strong leverage for them in the fulfilment of their work.

The male of this Melicertan was observed. It is small and similar in shape to others of the type. The body is long, narrow, terminating in a short foot. The head is truncated, surrounded by stout cilia, has two eyes placed wide apart; a large nerve ganglion fills the head sending threads towards the foot. In the chest is a large clear space, one third the length of the body. Close to this arises a large dark testicular gland filled with spermatozoa, and reaching nearly to the foot. In the foot two large mucous glands lie side by side.

The eggs are oval, and filled with granular matter, and colonies die down at the approach of winter.

BIBLIOGRAPHY.

- Melicerta ringens* W. C. Williamson, Quart. Jour., Micros Soc., 1853.
" " H. P. Gosse, *ibid.*
" " Bedwell, *ibid.*, 1878, p. 176.
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